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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/780,417

02/16/2004

Jerry Ihor Tustaniwskyj

550,707

1312

7590

04/17/2006

CHARLES J. FASSBENDER  
UNISYS CORPORATION  
M/S 1000  
10850 VIA FRONTERA  
SAN DIEGO, CA 92127

EXAMINER

VAZQUEZ, ARLEEN M

ART UNIT

PAPER NUMBER

2829

DATE MAILED: 04/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/780,417

Applicant(s)

TUSTANIWSKYJ ET AL.

Examiner

Arleen M. Vazquez

Art Unit

2829

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 10 February 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,9 and 13-16 is/are rejected.
- 7) ☒ Claim(s) 3-8 and 10-12 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Claim Objections***

1. Claims 3-8 and 10-12 are objected to because of the following informalities:

In claims 3 and 5, the limitation of "said second feedback circuit means senses the instantaneous power to said electric heater" is inaccurate because the second feedback circuit means is not used for sensing the instantaneous power to the electric heater.

Claim 4 is objected, because it depends on the objected claim 3.

In claims 6,8 and 10, is not clear what is meant by the limitation of "said set-point". "Said set-point" does not have any antecedent basis, therefore this limitation is considered as indefinite.

Claim 7 is objected, because it depends on the objected claim 6.

In claim 11 it appears that the limitation of "said upper power limit and said lower power limit" has no anticipated basis.

In claim 12 it appears that the limitation of "said average heater power" has no anticipated basis.

Appropriate correction is required.

***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title; if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1,9 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over ***Cardella (US 6,184,504)***.

As to claim 1, ***Cardella*** discloses a control system (Fig 2b) for maintaining the temperature of an IC-chip near a set-point while said IC-chip dissipates a varying amount of electrical power; the system comprising a heater transfer member/ fluid cool (95) for removing heat from an IC-chip under test (40), an electrical heater (90 and 125) which has one face that is connected to said heater transfer member (95) and an opposite face for coupling to said IC-chip (40), an heater transfer /fluid controller (160 and 162) coupled to said heater transfer member (95) and a heater controller (115) including a first feedback circuit for sending electrical power to said electric heater with a variable magnitude that compensates for changes in said IC-chip power. ***Cardella*** also suggest that the heater transfer member (95) could be a refrigeration unit (Col. 6 lines 30-35). It is well known that the refrigeration unit would include an evaporator. It would have been obvious for one of ordinary skill in the arte to substitute the refrigeration unit as an evaporator for a liquid refrigerant. A evaporator /fluid controller

(160 and 162) including a second feedback circuit for passing said liquid refrigerant to said evaporator with a variable flow rate that reduces electrical power usage in said heater over the power usage which occurs if said flow rate is fixed.

As to claim 9, **Cardella** discloses a first feedback circuit (115) that reads temperature from said IC-chip from a sensor (110) in said IC-chip (40) and sends electrical power to said electric heater with a magnitude that –a) increases as the temperature of said IC-chip decreases below said set-point and b) decreases as the temperature of said IC-chip increases above said set-point.

4. Claims 2 and 13 - 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Cardella (US 6,184,504)** in further view of **Theriault et al. (US 6,711,961)**.

As to claim 2, **Cardella** discloses everything above except for a valve included in the evaporator controller to adjust the flow rate of said liquid refrigerant. However, **Theriault et al.** discloses in Fig. 2 a valve (84,116) included in the evaporator controller (114) to adjust the flow rate of said liquid refrigerant.

It would have been obvious to one ordinary skill in the art at the time the invention was made to modify **Cardella** teachings by including a valve in the evaporator controller as taught by **Theriault et al.** for controlling and adjusting the flow rate that pass through.

As to claim 13, **Cardella** discloses everything above except wherein the combination of said evaporator, electric heater, heater controller and evaporator controller are replicated in said system multiple times such that each combination maintains the respective temperature of a respective IC-chip near a respective set-point. However, duplication of parts is not given patentable weight. (See *In re Harza*, 274 F.2d 669, 124 USPQ 378 (CCPA 1960))

As to claim 14, **Theriault et al.** discloses in Fig. 2 a controller (114) opens and closes said valve (84,116) with a pulse-modulated control signal (signals come from sensors 112 and 124).

As to claim 15, **Theriault et al.** discloses in Fig. 2 a controller (114) opens and closes said valve (84,116) to a degree that is selected with the amplitude of a control signal (signals come from sensors 112 and 124).

### ***Response to Arguments***

5. Applicant's arguments filed on February 10/2006 have been fully considered but they are not persuasive.

Referring to argument of "Thus, the system which patent `504 discloses simply will not work if the surfaces 90 and 100 are "connected directly" together, as claim 1 requires." Col. 3 lines 56-64 states surfaces 90 and 100 are engaged to provide good heat transfer between them, allowing the two surfaces work directly together.

As to arguments if items 160 and 162 of showing “merely two boxes with labels “heat exchanger” and “heat transfer fluid supply” respectively, and no language exists in patent `504 which teaches or suggests that the flow rate of refrigerant to the evaporator should varied” in Col. 6 lines 22-50 states the detailed description of how the items 160 and 162 manipulates the temperature and the heat transfer fluid for the system. In order to cool the IC chip the heater can be maintain in constant rate and increase the flow rate or maintain the flow rate constant and decrease the rate of the heater, as well to heat the IC chip the heater increases and the flow rate maintain the same or the flow rate decreases and the heater remains in constant rate. These relations between the flow rate and the heater are obvious.

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.


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7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Arleen M. Vazquez whose telephone number is 571-272-2619. The examiner can normally be reached on Monday to Friday, 8am to 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael Fahmy can be reached on 571-272-1705. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AMV

  
VINH NGUYEN  
PRIMARY EXAMINER  
A-U. 2829  
04/14/06